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ABSTRACT

In response to a need for additional data on agriculturally related employment, the Illinois State Board of Education funded a research project with two objectives: to collect additional agricultural employment data and to identify employment in agriculturally related industries in Illinois under the Standard Industrial Classification system. The task force recommended using four separate questionnaires for the Agricultural Services data collection. Agricultural Services is separated into six industries: soil preparation services; crop services; veterinary services; farm labor and management services; and landscape and horticulture services. (Five figures depict results and conclusions: distribution of employment in agricultural service sectors; statewide estimated employment in agricultural services sectors; average number of employees per industry number; and employment distribution in agricultural services. The bulk of this document contains estimated occupational employment results for the occupational cluster listed on the questionnaires: managers and owners; professional and technical occupations; mechanics, construction, repairers, and machine operative occupations; production and maintenance occupations; sales and services occupations; and clerical occupations.) (NLA)

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Statewide Occupational
Employment Study in
Agriculture
University of Illinois
at Urbana-Champaign

**Illinois
State Board of
Education**

Adult,
Vocational and
Technical Education

# ILLINOIS AGRICULTURAL OCCUPATIONS:

## An Occupational Employment Study of Agricultural Service Industries

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## STATEWIDE OCCUPATIONAL EMPLOYMENT STUDY IN AGRICULTURE: AGRICULTURAL SERVICE INDUSTRIES

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## DEPARTMENT OF ADULT, VOCATIONAL AND TECHNICAL EDUCATION

Vocational Education Program Improvement Section

June, 1989

OT-IO-709

# STATEWIDE OCCUPATIONAL EMPLOYMENT STUDY IN AGRICULTURE: AGRICULTURAL SERVICE INDUSTRIES

OT-IO-709

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Vocational Education Program Improvement Section

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# ILLINOIS EMPLOYMENT OPPORTUNITIES IN THE STANDARD INDUSTRIAL CLASSIFICATION OF 07: AGRICULTURAL SERVICE INDUSTRIES

## INTRODUCTION

Over the last 20 to 25 years numerous attempts have been made at the state and national levels to identify and report the number of persons employed in occupations related to agriculture. These efforts have met with varying degrees of success and in some cases have caused a great deal of misunderstanding in defining agriculturally related employment. Some surveys report that agricultural employment in Illinois is 5% of the total employment, and others report that it is 25% of the total employment. These conflicting statistics point out a major weakness in reporting agricultural employment. This weakness shows a failure to define specifically what is meant by the term "agricultural employment." In recent years, agricultural employment has come to mean all occupations which require agricultural competencies. Using this definition, many agricultural jobs will be found in a variety of industries currently classified under nonagricultural Standard Industrial Classification (SIC) Divisions.

The need for accurate and complete data covering all agriculturally related occupations is essential for sound planning of agricultural education programs. The Illinois State Board of Education, Department of Adult, Vocational and Technical Education (ISBE/DAVTE) has affirmed that an important responsibility of the system of public education is to contribute to the preparation of students for entry into employment. Education for employment programs which are supported with federal and state funds will be responsive to the changing nature of the labor market and to the changing characteristics of the work force according to the ISBE/DAVTE policy on vocational education.

The need for additional data on agriculturally related employment became evident when program planners in Illinois reviewed statewide employment data to identify target industries and occupations. The source of employment data used by these vocational program planners was collected and analyzed by the Illinois Department of Employment Security (IDES), Chicago, Illinois. Although other agencies and individuals occasionally collect and disseminate employment information, IDES is recognized as the official state agency specifically charged with this task. Therefore, if agriculturally related employment is to be identified, reported, and used for funding and program planning purposes, then the information would need to be generated from IDES data files.

In response to this need, ISBE/DAVTE funded a research and development project at the University of Illinois, College of Agriculture, Vocational Agriculture Service. This research and development project had two objectives: a) to collect additional agricultural employment data; and b) to identify employment in agriculturally related industries in Illinois using data currently collected and reported by the IDES and the Illinois Occupational Information Coordinating Committee (IOICC). This document is concerned with reporting employment data which was collected in the SIC 07 industries - Agricultural Services. To understand what IDES means by Agricultural Service Industries, it is necessary to review briefly their approach in categorizing industries and how this influences the reporting of occupational employment.

Employment data collected by IDES is organized under the Standard Industrial Classification (SIC) system. SIC is the "statistical classification standard underlying all establishment-based Federal economic statistics classified by industry." This system classifies industries in accordance with the composition and structure of the economy. It is important to note that these SIC characteristics are not necessarily the same as those used by educational agencies to classify businesses and industries for educational program planning purposes. The SIC Manual uses the same general approach to classify industries as biological scientists use to classify plants and animals. They both start with broad, general descriptions and work toward very specific descriptions. The following outline defines the industries covered in this document as determined by the SIC system. As you will note, this description will define agricultural service industries more narrowly than would be defined by the general agriculturist.

The first category the SIC system uses is called a "Division." (The data collected for this document is shown by the Bold Type in the following outline.) Divisions separate all Illinois industries into the following 11 areas:

**A. Agriculture, Forestry, and Fishing**
B. Mining
C. Construction
D. Manufacturing
E. Transportation, Communication, Electric, Gas, and Sanitary Services
F. Wholesale Trade
G. Retail Trade
H. Finance, Insurance, and Real Estate
I. Services
J. Public Administration
K. Nonclassifiable Establishments

Each of the above Divisions are then broken down into Major Industry Groups. For the purpose of this report, the Agriculture Division is separated below:

01 - Agriculture Production - Crops
02 - Agriculture Production Livestock and Animal Specialities
**07 - Agricultural Services**
08 - Forestry
09 - Fishing, Hunting, and Trapping

The SIC system then divides the Major Groups into Industry Group Numbers. The Major Group 07 - Agricultural Services, on which this document reports data, is separated as follows:

**071 - Soil Preparation Services**
**072 - Crop Services**
**074 - Veterinary Services**
**075 - Animal Services, Except Veterinary**
**076 - Farm Labor and Management Services**
**078 - Landscape and Horticultural Services**

All SIC Industry Groups, as shown above, are used to classify similar individual industries. For example, the Industry Group 074 - Veterinary Services has industries such as:

a. Animal Hospitals for Livestock
b. Veterinary Services for Livestock
c. Pet Hospitals
d. Veterinary Services for Pets/Animal Specialties

The Industry Group 078 - Landscape and Horticultural Services has industries such as:

a. Landscape Counseling
b. Landscape Planning
c. Garden Maintenance
d. Lawn Fertilizing Services
e. Arborist Services

All individual businesses which match the selected industries are then identified and contacted by the surveying agency and then asked to complete an employment questionnaire. A questionnaire is specifically designed for each Industry Group. The object of the survey is to list all occupational titles found in that Industry Group. The individual business then indicates how many workers are employed within each occupational title.

The occupations listed on the questionnaires are also grouped into similar cluster areas, for example 078 Occupational Clusters are:

a. Managers and Owners
b. Professional and Technical Occupations
c. Machine Operative Occupations
d. Mechanics and Repairers Occupations
e. Construction and Repairer Occupations
f. Production and Maintenance Occupations
g. Clerical Occupations
h. Sales and Service Occupations

The above Occupational Clusters contain more specific occupational job titles. For example, the Professional and Technical Occupations Cluster lists titles such as Landscape Architects, Drafters, and Cost Estimators. The Production and Maintenance Occupational Cluster lists Supervisors of Nursery Workers, Nursery Workers, Gardeners and Groundskeepers, and Lawn Service Workers among others in this Cluster.

Using the broader definition of agriculture, as explained earlier in this document, necessitates the need for an in-depth review of other SIC Division Categories to locate other industries which employ individuals in occupations which require competencies in agriculture. For example, Farm Implement Dealers are classified in the SIC Manual under the Wholesale Trade Division. Retail Florists are classified under the Retail Trade Division, and the list goes on-and-on. Only by conducting a thorough search of the industries throughout the SIC Manual, will statistical employment data be available to identify specifically how the Agricultural Industry (Food and Fiber System) can employ about 25% of the workers in Illinois. This particular issue is being pursued by this project through ISBE/DAVTE, IDES, and IOICC cooperation.

**Agricultural Service Industry Employment Data**

Of all the Major Groups Classified under the Agricultural Division, 07 - Agricultural Services was the only Major Group where no statistical survey was being conducted by IDES. The 01 and 02 Major Groups are primarily concerned with production agriculture and are surveyed by IDES in cooperation with the Illinois Department of Agriculture. The same arrangement is used for the 08 and 09 Groups. Therefore, employment data is available through one or more sources for these four areas.

In 1983, the National Occupational Information Coordinating Committee (NOICC) developed a handbook and appropriate questionnaires, using the Department of Employment Security guidelines and format, which could be used by state agencies to survey the 07 - Agricultural Services Industries. This NOICC Taskforce met in Iowa and these questionnaires have since been used in Iowa, Missouri, and Wisconsin to collect employment data in Agricultural Services. Through various meetings of ISBE/DAVTE staff and other agricultural professionals, it was determined that Illinois should also conduct this survey to add to the agricultural employment data bank of IDES.

## RESEARCH METHODOLOGY

A series of meetings were held with the IOICC, IDES, ISBE/DAVTE, and project staff to assure the cooperation of these agencies and to define the areas of responsibility for each. The data assembled by the NOICC Taskforce were secured and reviewed for methodology and questionnaire design. The NOICC Taskforce recommended using four separate questionnaires for the 07 data collection.

Questionnaire #1 was designed for SIC industries in:

071 - Soil Preparation Services
072 - Crop Services
076 - Farm Labor and Management Services

Questionnaire #2 was designed for SIC industries in 074 - Veterinary Services.

Questionnaire #3 was designed for SIC industries in 075 - Animal Services, Except Veterinary.

Questionnaire #4 was designed for SIC industries in 078 - Landscape and Horticultural Services.

These questionnaires were reviewed by a panel of technical experts, and it was determined that they were appropriate for these same industries in Illinois. Drafts of the questionnaires were prepared and mailed to selected specialists in each of the six industry groups to review for relevance and current industry employment patterns. The questionnaires were modified according to the suggestions of the technical specialists.

Specific business addresses were identified and printed by IDES. Project staff conducted a statewide search for other businesses using telephone directories. Any additional business addresses which were found were cross-checked with the IDES list to avoid duplication. Project staff conducted a thorough review of extant literature which reports agricultural employment in Illinois, other states, and the nation. As relevant data were identified, the staff reviewed their statistical methodology for data analysis techniques. This information was secured and documented for comparison with other employment data in agriculture.

Questionnaires were assembled and mailed along with a cover letter and a self-addressed return envelope to almost 3000 businesses classified by IDES as an Agricultural Service Industry. After approximately four weeks, a follow-up questionnaire was mailed to the nonrespondents. Approximately six weeks after the follow-up mailing, the Survey Research Laboratory (SRL), Urbana, Illinois, was used to conduct follow-up telephone calls to the remaining nonrespondents. To satisfy IDES survey requirements, SRL was to secure a return rate of about 70%. The use of SRL staff provided for the use of trained telephone interviewers to collect the final data. IDES has used SRL staff to collect other employment data in past years. The final return rate for the 07 data was 66%. Estimated employment data were calculated and verified using IDES statistical procedures. Data were analyzed at the University of Illinois using descriptive statistics in accordance with IDES standards. The master file data tape was mailed to IDES for review by their statistical personnel to verify its accuracy. Please refer to the Technical Addendum for additional information on the survey procedures and statistical data.

## RESULTS AND CONCLUSIONS

### DISTRIBUTION OF EMPLOYMENT IN AGRICULTURAL SERVICE SECTORS

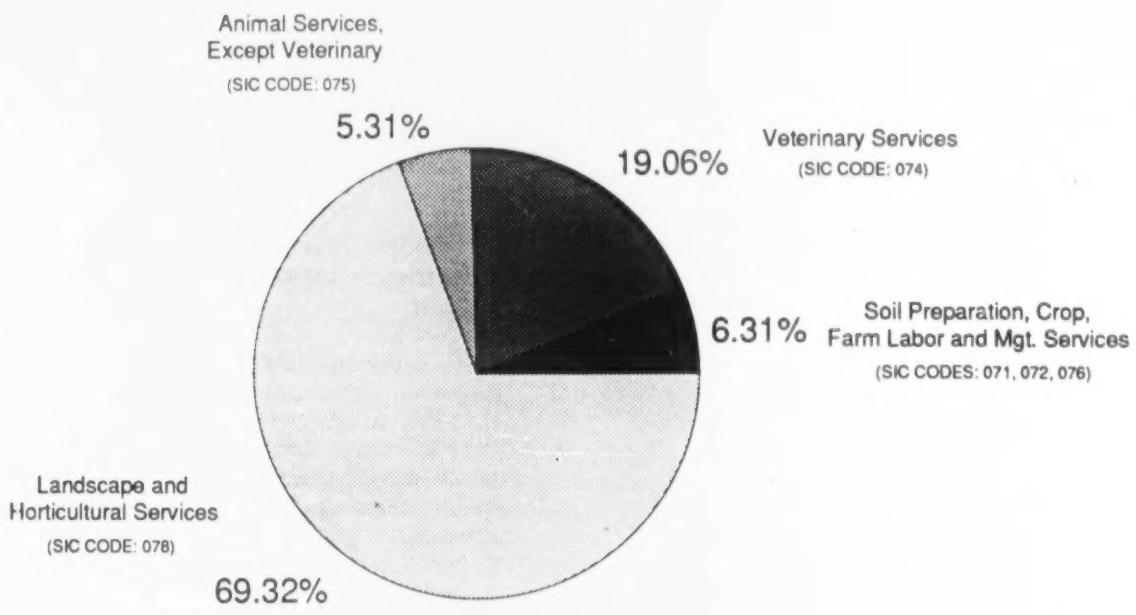
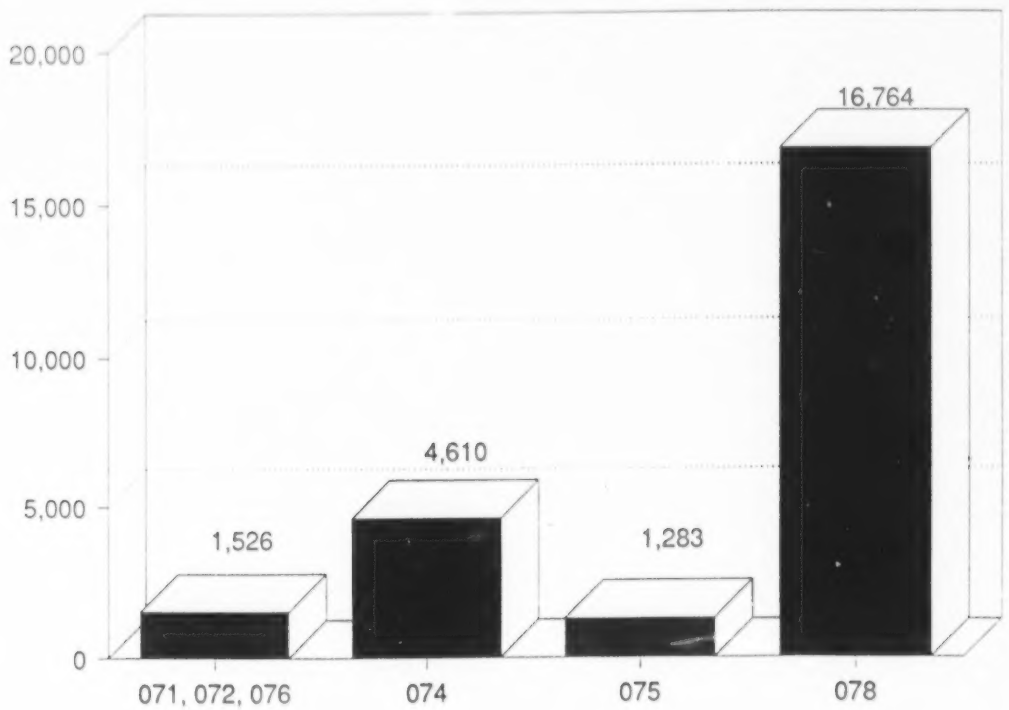



Figure #1

The representation of business groups making up 07 - Agricultural Service employment opportunities is shown in Figure #1. The greatest number of employees (69%) identified in 07 industries is found in the 078 - Landscape and Horticultural Service Industries sector. This sector accounts for over 16,750 of the total 24,183 employees working for 07 industries - Figure #2.

The second largest employing sector is 074 - Veterinary Services, which has almost 20% (4,610) employees. The remaining employment is almost equally divided between 075 - Animal Services and 071, 072, and 076 - Soil Preparation, Crop, Farm Labor and Management Services with 5% (1,283) and 6% (1,526) respectfully completing the remaining employment opportunities in Agricultural Services.

STATEWIDE ESTIMATED EMPLOYMENT IN AGRICULTURAL SERVICES SECTORS




SIC 071, 072, 076: Soil, Crop, Farm Labor and Mgt. Services
SIC 074: Veterinary Services
SIC 075: Animal Services, Except Veterinary
SIC 078: Landscape and Horticultural Service

Figure #2

Since this is the first time a state survey of Agricultural Service Industries has been conducted, the project could not use past data to develop employment projections for future years. However, through a review of the extant literature, it is possible, in some industry groups, to formulate general predictions on the employment outlook. The authors have attempted to provide this information where data have been available. Also, due to the paucity of some of the industry numbers, this document will report statewide data only. Although it should be noted that many of the Agricultural Service Industries are located in and around the Standard Metropolitan Statistical Areas (SMSAs) - Figure #3.

LEGEND

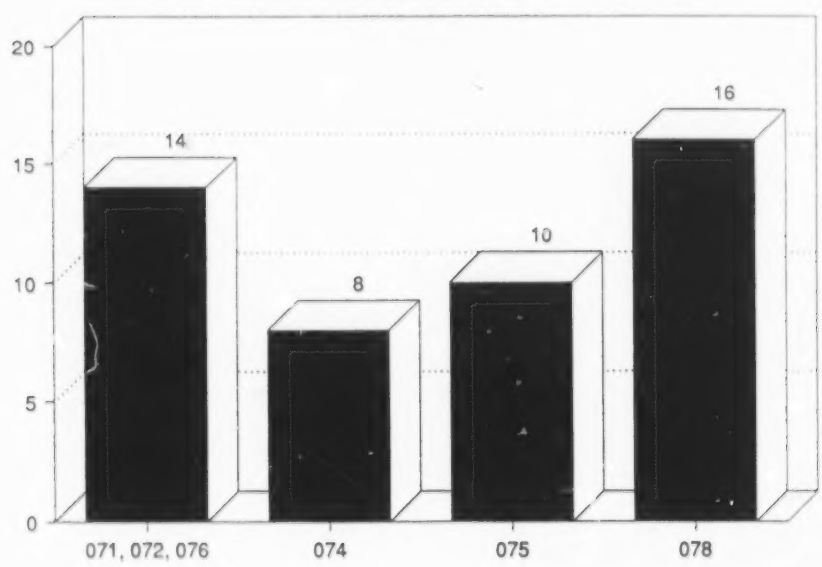
- Places of 100,000 or more inhabitants
- Places of 50,000 to 100,000 inhabitants
- Central cities of SMSA's with fewer than 50,000 inhabitants
- Places of 25,000 to 50,000 inhabitants outside SMSA's

Standard Metropolitan Statistical Areas (SMSA's)

Map of Illinois showing Standard Metropolitan Statistical Areas.

Figure #3

## AVERAGE NUMBER OF EMPLOYEES PER INDUSTRY NUMBER

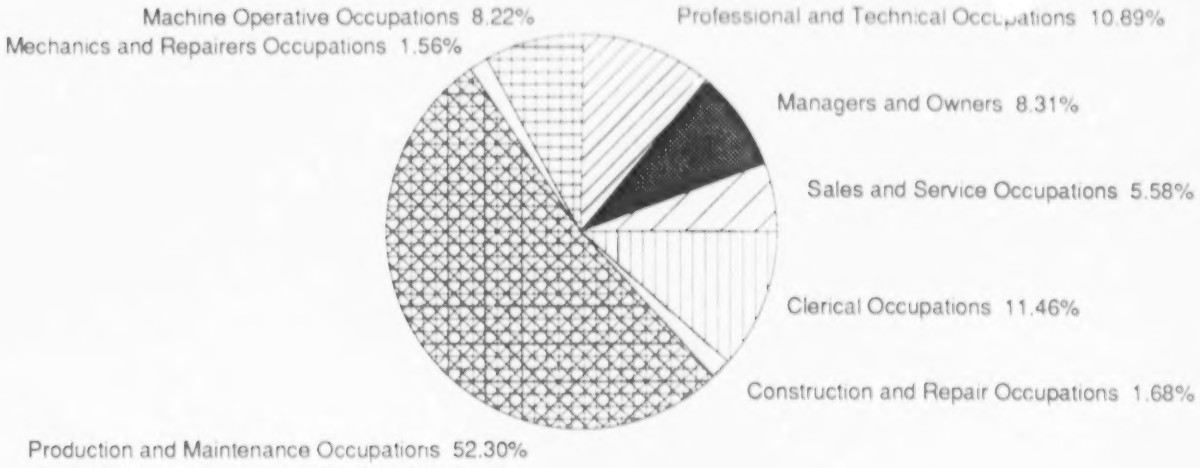



SIC 071, 072, 076: Soil, Crop, Farm Labor and Mgt. Services
SIC 074: Veterinary Services
SIC 075: Animal Services, Except Veterinary
SIC 078: Landscape and Horticultural Services

Figure #4

As shown in Figure #4, the agribusinesses which make up the Agricultural Services sector are generally small businesses. The smallest industry group (SIC 074) has an average of 8 employees and the largest group (SIC 078) has 16 employees. Almost all other agribusinesses classified in other SIC Divisions employ the same number of employees. This is important for agricultural educators to note as they prepare students for employment in agriculture after high school, community college, or university preparation. The employee training needs of small businesses are different from those of large conglomerate organizations. In many cases, small businesses do not have the resources to set up and operate employee training programs. When they hire an employee, that employee should already have mastered certain basic employability skills. Teachers have access to a large body of information which deals with owning and operating small businesses. Agricultural educators have traditionally spent a great deal of time helping students understand how to operate an agribusiness through the use of supervised agricultural experience programs and classroom instruction on agribusiness principles and recordkeeping.

EMPLOYMENT DISTRIBUTION IN AGRICULTURAL SERVICES BY OES CODE


Machine Operative Occupations 8.22%
Mechanics and Repairers Occupations 1.56%
Professional and Technical Occupations 10.89%
Managers and Owners 8.31%
Sales and Service Occupations 5.58%
Clerical Occupations 11.46%
Construction and Repair Occupations 1.68%
Production and Maintenance Occupations 52.30%

Total Sample Number: 24183

Figure #5

It is important to know the type of occupation a student might expect to find in an Agricultural Service Industry. Figure #5 indicates that 52% of the employees will be found in Production and Maintenance Occupations. However, as will be explained later, many of these occupations are concentrated in the Landscape and Horticultural Sector. The second highest occupational cluster of in terms of employment is Clerical with almost 12% of the work force. Professional and Technical occupations account for approximately 11% of the employment. Managers and Owners Occupations and Machinery Operative Occupations each contribute 8% toward the total of 24,183 employees. Sales and Service Occupations also make up over 5% of the working force in Agricultural Services. The smallest occupational clusters in Agricultural Services are Construction and Repair and Mechanics and Repairers with each having almost 2% of the total work force in 07 industries.

Assuming that Agricultural Service industries are similar to other agribusinesses of the same general size, agricultural educators should reflect on the information presented in Figure #5. This graphic presents a general overview of the types of occupations for which students will be applying in an agribusiness. The important question to ask is, "Do present agricultural education programs prepare students for these occupations?"

The remaining sections of this document will look at each of these occupational cluster areas in more detail and present specific DOT occupational titles with information on selected occupations in each of the four industry clusters in Agricultural Services.

# ESTIMATED OCCUPATIONAL EMPLOYMENT RESULTS

MANAGERS and OWNERS

PROFESSIONAL and TECHNICAL OCCUPATIONS

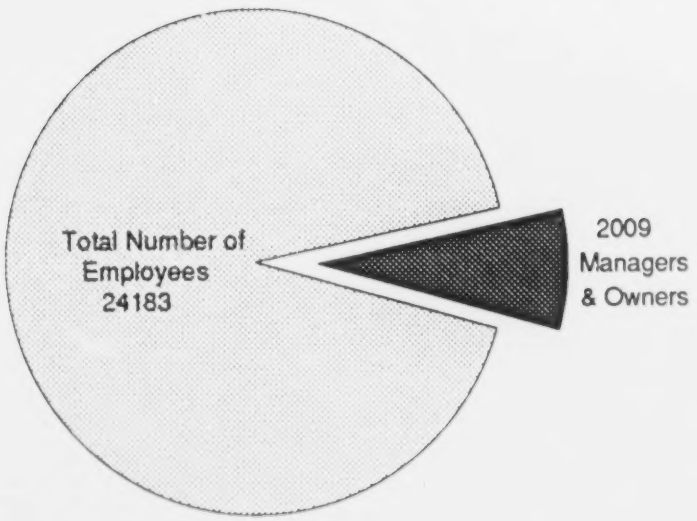
MECHANICS, CONSTRUCTION, REPAIRERS and MACHINE OPERATIVE OCCUPATIONS

PRODUCTION and MAINTENANCE OCCUPATIONS

SALES and SERVICES OCCUPATIONS

CLERICAL OCCUPATIONS

## MANAGERS and OWNERS




| Standard Occupational Classification | Occupational D.O.T. Titles |
|---|---|
| Managers and Officers | General Manager<br>Manager Production<br>Superintendent, Production<br>Manager, Dairy Farm<br>Manager, Poultry Hatcher<br>Manager, Game Breeding<br>Manager Landscaper |

Figure #6

Managers and owners in agricultural service industries are responsible for the efficient, profitable operation of any agribusiness. Managers often find themselves needing to formulate policies to help employees adjust to the ever-changing structure of the organization. By careful direction of overall and specific operations, a manager can help maintain a good profit margin, while also maintaining an efficient economical base. Frequently, managers must inspect the services and products of the agribusiness to ensure acceptable quality.

Most of these 2,009 managers and owners in agricultural service industries find themselves in offices close to the central location of the agribusiness operation to facilitate a personal, direct approach to managing the operation. In order to keep the business running smoothly, managers and owners must often keep long hours, sometimes causing intense stress to meet the goals and objectives of the organization. Managers need to use a variety of skills to assure top efficiency of the operation. These types of industries, by their very nature, are people and service oriented. Therefore, strong interpersonal skills are important when dealing with customers and clients. Some of these skills are gathering and using information, using problem-solving strategies, communicating with coworkers, participating in groups, following and giving directions, presenting a point of view, communicating with clients and customers, and evaluating performance of employees. It is also important for managers to have an in-depth understanding and, if possible, personal, practical experiences with many of the physical operations that employees are hired to perform.

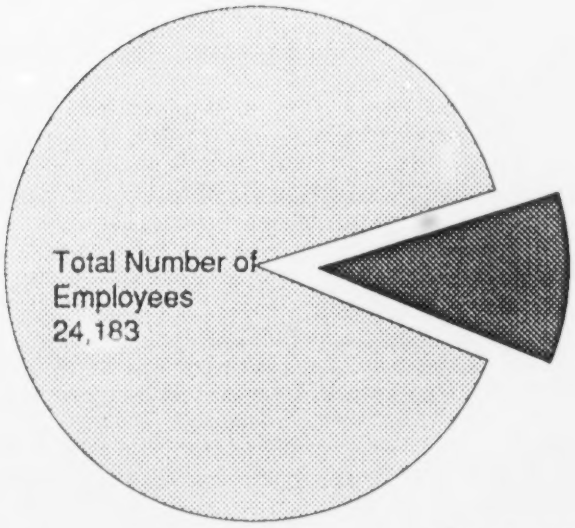
In order to build a career as a manager or owner in an agricultural service industry, there are various educational routes to take. However, many people have had success by starting their initial development in high school. This would include enrolling in two or more courses which emphasize agricultural business and management principles. These programs should include instruction in management, finance, marketing, and a foundation in crop and livestock production practices such as appropriate practical mechanical skills, leadership skills, and hands-on occupational experience. Leadership skills are generally developed through the vocational student organization (FFA) activities. To personalize the course content, individualized instruction and learning reinforcement are provided through supervised agricultural experience programs (SAEPs) which allow students to start their own agribusiness operation or gain work experience in an existing agribusiness.

Training received in this program may be used as a basis for entry-level employment or for further training at a postsecondary agency. Many students find that additional education and training beyond high school are assets when working toward a management or owner position. This could include two or more years of agriculturally related coursework which may culminate in a Bachelor's degree in Agricultural Economics with an emphasis in agricultural business management. This educational program would help in achieving a managerial career in an agribusiness. Few people are hired directly into these positions. Promotion comes mainly through experience and proven success in former positions, so time spent gaining additional on-the-job experience and education can often lead to a managerial position.

It has been estimated that employment opportunities nationwide will be strong for new college-educated managers. There is evidence to suggest that there will be an increase in the proportion of agriculture and natural resource managers in the private sector. In addition, some expansion of salaried and entrepreneurial opportunities is expected in landscape industries. However, slightly fewer agricultural business management opportunities are projected in wholesale and retail establishments that sell seed, feed, machinery, animal health products, or agricultural chemicals.

Once established in a career, a manager often makes from $31,000 to over $52,000 annually in a successful agribusiness. If you start your own business, there will probably be a few years which are very lean financially. As a business is getting started, it is generally necessary to put many of the financial returns back into the business to purchase capital equipment items, establish a market base, and repay business loans.

## PROFESSIONAL and TECHNICAL OCCUPATIONS

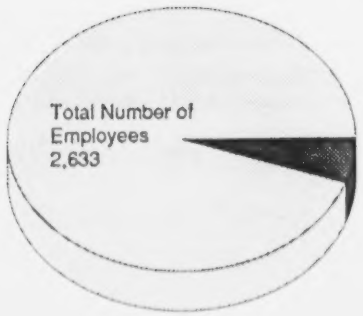



2,633
Professional
and Technical
Occupations

| Standard Occupational Classification | Occupational D.O.T. Titles |
|---|---|
| Agricultural and Food Scientist | Agronomist<br>Soil Scientist<br>Animal Scientist<br>Dairy Scientist<br>Animal Breeder |
| Biological, Agricultural and Food Technologist, Except Health | Food Technologist<br>Seed Analyst<br>Artificial Inseminator<br>Dairy Technologist |
| Agricultural Engineers | Agricultural/Design Engineer |
| Veterinarian and Veterinary Inspectors | Veterinarian |
| Veterinarian Technicians | Veterinarian Aide |
| Landscape Architects | Landscape Architect |
| Surveying and Mapping Technicians | Surveyor Assistant |
| Aircraft Pilots and Flight Engineers | Aerial Applicator Pilot |
| Drafters | Drafter, Landscape<br>Drafter, Architectural |
| Accountants and Auditors | Budget Accountant |
| Cost Estimators | Estimators |
| Purchasing Agents & Buyers, Farm Products | Purchasing Agent, Ag. Supplies |
| All Other Professional, Paraprofessional and Technical Workers | Quality Control Specialist<br>Soil Conservationist<br>Machine Milker<br>Agricultural Economist |

Figure #7

## AREA OF SOIL PREPARATION, CROP, FARM LABOR & MGT. SERVICES
### Professional and Technical Occupations




147
Professional
& Technical
Occupations

| Standard Occupational Classification | Occupational D.O.T. Titles |
|---|---|
| Agricultural and Food Scientists | Agronomist<br>Plant Breeder<br>Soil Scientist<br>Entomologist |
| Biological, Agricultural and Food Technologist, Except Health | Food Technologist<br>Laboratory Technician<br>Soil Test Analyst<br>Seed Analyst |
| Agricultural Engineers | Agricultural Engineer<br>Engineering Consultant<br>Design Engineer |
| Accountants and Auditors | Budget Accountant<br>Tax Auditor |
| Aircraft Pilots and Flight Engineers | Aerial Applicator Pilot |
| Purchasing Agents and Buyers, Farm Products | Purchase Price Analyst<br>Purchasing Agent, Ag. Supplies<br>Buyer Grain, Ag. Supplies<br>Grain Elevator Operator |
| All Other Professional, Paraprofessional and Technical Workers | Quality Control Specialist<br>Agricultural Electrician<br>Extension Specialist<br>Soil Conservationist |

Figure #7a

Agricultural scientists have played an important role in today's agricultural service industries. They can be divided into two major groups: those which emphasize plants and those which emphasize animals in their research and development activities. First, we will look at professional and technical occupations which stress plant research and development.

People working in these positions study agricultural crops in order to increase efficiency of production, quantity, and quality of the product. Their work can also lead to the control of pests and weeds that compete with crops. Other scientists study how to control the loss of the nation's soil and water. Because these scientists often work closely with biologists and engineers, these fields are interrelated. The principles of biology and engineering are often applied by agricultural scientists and technicians to solve agriculturally related problems. For example, work in soil conservation requires the application of engineering concepts when designing soil conservation structures. Work in seed and crop production requires an application of biological principles when researching pest control programs.

One aspect of the work requires time to be spent in offices and laboratories preparing reports and documents and attending meetings. The other part of the job involves time spent outdoors collecting research data, supervising workers, following up on construction activities, or evaluating and answering clients' problems and questions.

As with all professional and technical occupations, few entry-level positions exist. In preparing for a professional career as an agricultural scientist, one must plan for postsecondary education and training. A postsecondary program would include coursework in areas such as agronomy, soil surveying, soil testing, soil management and conservation, plant breeding, microbiology, and a foundation in agricultural crop production.

A secondary program, which would provide a strong foundation for continued education for a professional career as an agricultural scientist, would include coursework in agricultural education, biological and physical sciences, mathematics, and communications. The agricultural education courses would provide techniques for apply-

ing many of the concepts covered in academic science courses. The agricultural program would cover such topics as recognizing the role of research and development in agriculture, recognizing the impact of technology on agriculture, developing problem-solving skills, understanding basic soil science principles, identifying basic principles of plant and soil science, identifying basic agricultural mechanics principles, and conserving agricultural resources, plus a host of other relevant topics. Students can get hands-on work experience through planned SAEPs and other individualized programs while in high school. All these early career experiences will contribute to success in professional and technical occupations in agricultural service industries.

National employment data indicate expanding career opportunities in science, engineering, and related professions for agriculture. The strongest employment opportunities will be for persons having doctoral degrees and experience in molecular genetics, biochemistry, environmental science, and soil science. Employment opportunities are expected to be strong in natural resource conservation and landscape architecture.

An individual with two to four years of postsecondary education and training in agricultural science can begin as a new employee at around $14,800 to $18,400 annually. A worker with a Master's degree averages a starting salary from $18,400 to $22,500, whereas a Ph.D. holder earns an average of $27,200 to $32,600 as a starting annual salary.

AREA OF VETERINARY SERVICES
Professional and Technical Occupations

1,712
Professional
& Technical
Occupations

| Standard Occupational Classification | Occupational D.O.T. Titles |
|---|---|
| Agricultural and Food Scientists | Animal Scientist<br>Animal Breeding Scientist<br>Biotechnologist<br>Geneticist |
| Veterinarian and Veterinary Inspectors | Veterinarian<br>Veterinarian, Parasitologist<br>Veterinarian, Virologist<br>Veterinarian, Livestock Instructor |
| Veterinarian Techinicians | Veterinarian Aide |
| Biological, Agricultural, and Food Technicians and Technologists, Except Health | Feed Research Aide<br>Laboratory Technician<br>Biological Aide<br>Artificial Inseminator<br>Artificial Breeding Technician |
| Accountants and Auditors | Budget Accountant<br>Cost Accountant<br>Internal Auditor |
| All Other Professionals, Paraprofessionals and Technical Workers | Extension Specialist<br>Field Service Technician<br>Public Relations Specialist |

Figure #7b

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Animal scientists study and care for pets and livestock, protect the public from animal diseases, and treat sporting animals. Many individuals enter this field because of their love for animals and the benefit of caring for companion animals. These scientists often diagnose problems of various animals and prescribe and administer medicine. Often the type of work is dependent on the geographical location. For instance, an animal scientist in a rural area would probably work mainly with livestock, a metropolitan animal scientist with domestic animals.

These professionals and technicians usually work in animal hospitals, clinics, and laboratories. Often, the clinics are mobile so the trained professional can go to the animals needing treatment. There is some degree of danger involved with treating animals if precautions are not exercised, but with proper education and training the chance of injury is minimal. The working conditions can vary greatly as do the hours.

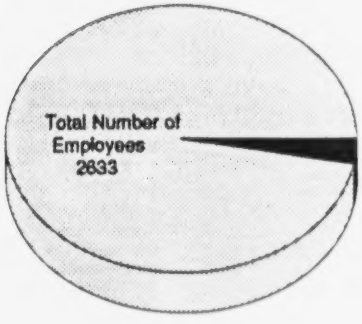
As with other professional and technical occupations, few entry-level positions exist for individuals without a college education and adequate training. Individuals interested in a career in this area should concentrate their secondary and postsecondary education on animal and biological sciences. This would include courses dealing with understanding basic genetics and reproduction, identifying basic principles of animal science, understanding animal anatomy and physiology, meeting nutritional needs of animals, maintaining animal health, and caring for animals.

Many animal scientists and technicians must be licensed from an accredited college where they must pass a series of proficiency exams. To be a veterinarian, for example, usually requires six years of college which includes at least two years of pre-veterinarian study emphasizing the physical and biological sciences in addition to a 4-year professional degree program.

National employment data suggest expanding career opportunities for veterinary science and related professions. These opportunities will be for people having doctoral degrees or postdoctoral experience in molecular genetics, biochemistry, and nutrition.

Starting salary ranges from $20,000 to $22,000 annually. After four years experience, the average annual salary is $43,000.

## AREA OF ANIMAL SERVICES, EXCEPT VETERINARY
### Professional and Technical Occupations




| Standard Occupational Classification | Occupational D.O.T. Titles |
|---|---|
| Agricultural and Food Scientists | Dairy Scientist<br>Poultry Scientist<br>Animal Breeder<br>Apiculturist |
| Biological, Agricultural and Food Technicians and Technologists, Except Health | Dairy Technologist<br>Poultry Inseminator<br>Field Service Technician<br>Feed Research Aide |
| Accountants and Auditors | Budget Accountant<br>Tax Auditor<br>Cost Accountant<br>Internal Auditor |
| All Other Professional, Paraprofessional and Technical Workers | Agricultural Economist<br>Extension Specialist<br>Field Service Technician<br>Public Relations Specialist<br>Machine Milker |

Figure #7c

These animal scientists study animals in order to develop ways to improve the quality and quantity of livestock and companion animals. This is closely related to biological sciences because of similar principles applied in both areas. Many of these scientists manage and administer research and development programs. In these programs, an animal scientist can research breeding, feeding, and the management and health of companion animals, domestic farm animals, dairy cattle, and poultry.

These animal scientists will work either outdoors on farms, at agricultural research stations, in offices, or in laboratories. The location generally depends on the type of research the scientist is conducting.

As with all professional occupations there are few entry-level positions available without postsecondary education. In order to prepare for a career in animal science, a strong secondary and postsecondary education is recommended with a concentration in agricultural science and other physical and biological science courses. Additional requirements would include communication skills and some on-the-job training. A bachelor's degree is required for non research technical jobs, whereas, in order to participate in applied research, a Master's degree in agricultural science is highly desirable. With a Ph.D., an animal scientist can teach at the university level and become involved in independent research.

On a national level, employment data indicate good career opportunities in animal science and related areas. Again, the largest number of opportunities will be for persons having doctoral degrees and experience in molecular genetics, biochemistry, and nutrition.

An animal scientist with a bachelor's degree starts at $14,800 to $18,400. With a Master's degree, the annual salary averages from $18,400 to $22,500. Annually, a Ph.D. can earn a starting salary of $27,200 to $32,600. Animal scientists working for the federal government average about $35,400 a year.

## AREA OF LANDSCAPE AND HORTICULTURE SERVICES
### Professional and Technical Occupations

690 Professional & Technical Occupations

| Standard Occupational Classification | Occupational D.O.T. Titles |
|---|---|
| Landscape Architects | Landscape Architect<br>Landscape Planner |
| Surveying and Mapping Technicians and Technologists | Surveyor Assistant<br>Map Editor |
| Drafters | Drafter, Cartographic<br>Drafter, Landscape<br>Drafter, Architectural |
| Cost Estimators | Estimators |
| Accountants and Auditors | Budget Accountant<br>Tax Auditor<br>Cost Accountant<br>Internal Auditor |
| All Other Professional, Paraprofessional and Technical Workers | Cartography Supervisor<br>Supervisor Mapping |

Figure # 7d

Professionals in the landscape and horticulture profession are trained to design and prepare landscaping sites to be functional as well as beautiful. They plan the location of buildings, roads, pathways, and plant life according to the space available. To do this effectively, they must analyze the natural elements of each site including the climate, the slope of the land, the placement of plants in accordance with the sun's angle, and so on. These professionals often work independently, or for landscaping companies. Airports and park districts also employ these professionals. Sketches often will be drafted on the computer. These professionals must also prepare the plans of the site using several different models, take photos of the site, and make cost estimates for the plan. Once a plan is accepted, they frequently supervise the installation of the final landscape plan.

Although there is a large amount of outdoor work, it is balanced with indoor office time. The time indoors is spent on preparing sketches, researching plant data and other environmental factors, and preparing presentations. There is usually a 40-hour, 5-day work week; but as deadlines approach, overtime hours may be required to meet the contract.

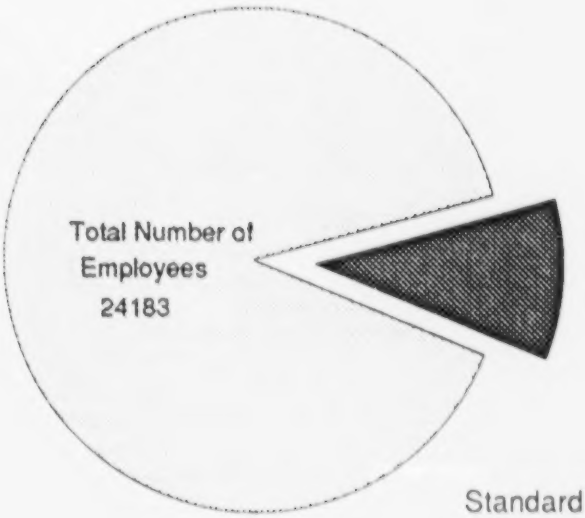
As with most professional occupations, very few entry-level jobs exist without some postsecondary education and previous work experience. An ambitious secondary and postsecondary education is recommended, concentrating on such courses as horticultural business and management; landscape design; computer technology; horticultural science and production; horticultural mechanics; geography; mathematics; and communications. To obtain the necessary work experience, many students use supervised agricultural experience programs during their schooling. The secondary instructional program will prepare individuals to produce, process, and market plants, shrubs, and trees used principally for ornamental, recreational, and aesthetic purposes. Training is also provided for other landscaping-related areas such as nursery operation and management, and turf management. Instruction in the maintenance and operation of machinery and equipment is also provided.

Training received in this secondary program may be used as a basis for entry-level employment into the landscaping business or for further training at a postsecondary agency.

Most of the people hired as professional and technical landscapers have a bachelor's or a master's degree. Nationally, new employment opportunities for landscape designers, landscape architects, and related professions are expected to be strong for the next few years.

These professionals usually make a starting salary averaging $18,000 per year. If a Master's degree is acquired, that salary increases to a starting rate of $22,000. Most of the landscape professionals average between $25,000 and $50,000 annually in the nation, depending on the region and quality of work experience.

## MECHANICS, CONSTRUCTION, REPAIRERS, and MACHINE OPERATIVE OCCUPATIONS




2771
Mechanics,
Construction,
Machine Operative
Occupations

| Standard Occupational Classification | Occupational D.O.T. Titles |
|---|---|
| Supervisors and Manager/Supervisors Mechanics, Installers and Repairers | Fertilizer Supervisor<br>Welding Supervisor<br>Maintenance Supervisor |
| Farm Equipment Mechanics, Diesel | Diesel Engine Repair<br>Farm Equipment Mechanics |
| Farm Equipment Mechanics, General | Sprinkler-Irrigator Equipment Assembly Repairer<br>Machinery "Set-Up" Mechanics |
| Welders and Cutters | Welder Combination<br>Arc Welder |
| All Other Mechanics, Installers and Repairers | Set-Up Person, Agric. Equipment<br>Agricultural Electrician |
| Irrigation System Installers | Systems Installer |
| All Other Construction Trades Workers | Farm Buildings Constructor<br>Grain Storage Constructor<br>Grain Drying Constructor |
| Farm Equipment Operators | Farm Machine Operator |
| Sprayer-Applicators | Hydro-Sprayer Operator<br>Fertilizer Applicator<br>Hand Sprayer Applicator |
| Grader, Dozer and Scraper Operators | Elevating-Grader Operator<br>Scraper Operator |
| Dairy Processing Equipment Operators | Dairy Equipment Operator |
| Crushing, Grinding and Mixing Operators | Fertilizer Mixer |

Figure #8

The tasks these workers perform is dependent upon the type of industry. For instance, a dairy equipment operator on a dairy farm will naturally be performing tasks associated with animal husbandary, and the hydro-sprayer operator will be concerned with tasks more closely aligned with plant science technology. However, workers in these occupations are responsible for various duties associated with crop and livestock production. They are also responsible for maintaining and repairing equipment necessary for producing a successful product. Some employees are in charge of planning the crop rotations and the input resources necessary for those crops. Others are packagers and loaders, responsible for the predistribution process.

In addition, many times it is these employees which have the responsibility of setting up and operating the equipment used in these industries. In today's world, technology cannot help but reach every business in the nation because of the increasing reliance on technology to reach peak efficiency, quality, and quantity. Breakdowns are inevitable, and these employees perform repair and maintenance. Also, they often perform preventative maintenance operations. The workers use basic and speciality hand tools, precision instruments, and diagnostic equipment. Repairers and mechanics usually work indoors, but sometimes must work outdoors where the agricultural equipment is located.

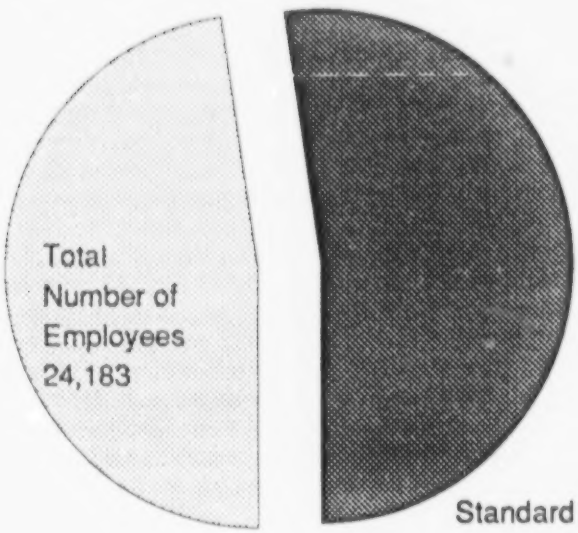
Most of the work for machine operative occupations is outdoors, the hours usually going from sunup to sundown. Similar to construction occupations in other industries, some of these jobs are seasonal depending upon the products and services of the industry. However, full-time positions are available in some of the industries. During the "off-season" workers repair and recondition equipment to minimize unnecessary breakdowns during their busy season. Also, many industries have diversified into other enterprises so that the employees will have full-time positions. It is important to note that many of these occupations are considered hazardous, and proper education and training needs to be obtained.

A secondary education program which concentrates on agricultural power and machinery is highly desirable for entry-level employment in this area. Many employers prefer to hire individuals who have completed one or more years of postsecondary training in agricultural mechanics which stresses the latest in agricultural equipment technology. This instructional program will prepare individuals to select, operate, service, maintain, and repair a variety of agricultural power units and agricultural machinery and equipment. Instruction is provided in servicing gas, diesel, and electrical units and hydraulic and other power transfer systems. Other related areas which are covered in the program include welding and metallurgy, designing, building and maintaining agricultural structures, and financing and managing agricultural equipment.

The increasing technical sophistication of agricultural equipment will make it more difficult to maintain and repair, forcing agricultural businesses to rely more on skilled mechanics. The number of employees in this occupational area is expected to remain steady over the next ten years. Most job openings will arise as experienced workers transfer to other occupations, retire, or stop working for other reasons. The largest number of opportunities will be available for individuals with formal training and experience in agricultural equipment maintenance and repair. Also, applicants who have previous work experience and skills to operate agricultural machinery and equipment will have an advantage over those lacking these skills.

Typically, workers who have the necessary technical training earn from $14,000 to $26,000 per year. Most of the employment has been in agricultural equipment dealerships and large agricultural businesses.

## PRODUCTION and MAINTENANCE OCCUPATIONS




12,648
Production &
Maintenance
Occupations

| Standard Occupational Classification | Occupational D.O.T. Titles |
|---|---|
| Supervisors, Vegetable or Field Crop Workers | Production Manager<br>Harvesting Supervisor<br>Labor-Crew Supervisor |
| Supervisors, Orchard and Vineyard Workers | Tree Fruit Farmer |
| Supervisors, Irrigation Workers | Filtration Supervisor |
| Sup, Graders, Sorters and Packers | Agric. Inspector Grader |
| Supervisors, Animal Caretakers | Livestock Yard Supervisor |
| Supervisors, Livestock, Dairy and Poultry | Supervisor, Dairy Processing |
| Supervisors, Nursery Workers | Nursery Manager |
| Vegetable or Field Crop Workers (Hand) | Grain Farm Worker<br>Field Crop Harvest Worker |
| Irrigation Workers | Irrigator Specialist |
| Graders, Sorters, Packers Agricultural Products | Sorter<br>Machine Packager |
| Animal Caretakers, Except Farm | Animal Nursery Worker<br>Animal Caretaker |
| General Farmhands (may be combined Livestock and Crop) | General Farm Worker<br>Poultry Farmer |
| Artificial Inseminator | Artificial-Breeding Technician |
| Dog/Cat Groomers | Dog Groomer/Cat Groomer |
| All Other Helpers and Laborers | Crop Scout |

Figure #9

25

Agricultural production and maintenance occupations make up about one-half of the total employment in the Agricultural Service Industries. Many of these positions are available to individuals who have completed a secondary vocational education program which is planned around these and similar occupations. These entry-level production and maintenance occupations can provide an avenue for career advancement within this industry. To offer a better understanding of this occupational area, the data are divided into those occupations which are primarily concerned with plant production and maintenance and those concerned with animal production and maintenance.

Many individuals use production and maintenance occupations as a way to get started or to advance within the industry. A supervised agricultural experience program can provide part-time employment which leads to full-time work. As employees gain professional experience, they may be considered for management positions or decide to start their own business. As work experience progresses, it is generally necessary to continue attending postsecondary agencies to learn those skills which are not taught in the secondary system but which are used in higher-level positions within the industry.

Workers in production and maintenance occupations may have the opportunity to work part-time while they are students, as some of the worker tasks are seasonal. This could then create avenues for full-time employment. The wages for plant production and maintenance workers generally average between $8,300 and $16,600 per year, while wages average between $8,300 and $12,500 for animal production and maintenance workers.

## SOIL PREPARATION , CROP , FARM LABOR, MGT. SERVICES AND LANDSCAPE AND HORTICULTURE SERVICES
### Production and Maintenance Occupations

| Standard Occupational Classification | Occupational D.O.T. Titles |
|---|---|
| Supervisors, Vegetable or Field Crop Workers | Weed Inspector<br>Harvesting Supervisor<br>Labor-Crew Supervisor |
| Supervisors, Orchard and Vineyard Workers | Tree Fruit Farmer |
| Supervisors, Irrigation Workers | Filtration Supervisor |
| Supervisors, Graders, Sorters and Packers | Fruit Grading Supervisor<br>Agric. Inspector-Grader |
| Supervisors, Nursery Workers | Nursery Manager |
| Vegetable or Field Crop Workers (Hand) | Grain Farm Worker<br>Field Crop Harvest Worker<br>Vegetable Farm Worker |
| Nursery Workers | Horticultural Worker |
| Orchard & Vineyard Workers/Pruners | Tree Pruner |
| Irrigation Workers | Irrigation Specialist |
| Graders, Sorters, Packers Ag. Products | Sorter<br>Machine Packager |
| General Farmhands | General Farm Worker |
| Gardeners and Groundskeepers | Landscape Gardener<br>Park Groundskeeper |
| Lawn Service Workers | Lawn Service Worker<br>Greenskeeper |
| All Other Helpers and Laborers | Crop Scout<br>Pest Control Worker |

Figure #9a



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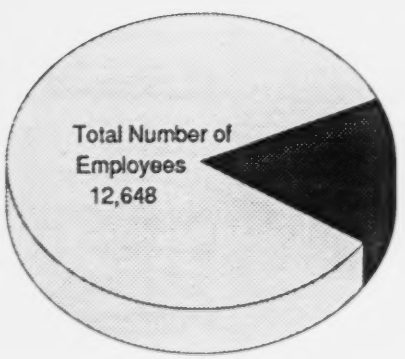
Workers in these occupations can encounter several different levels of skill training which are needed for their various job tasks. Some of the work may require semiskilled training and other assignments require a high level of technical knowledge and training. In large, specialized agricultural businesses, a worker may be assigned a few routine tasks, but in a small agricultural business, the worker may assume responsibility for a variety of tasks because of the small number of employees. The variety of worker assignments would involve tasks which are performed to raise and harvest crops like fruits, vegetables, ornamental plants, cereal grains, and/or oil crops. These workers would need to know how to maintain and operate properly the equipment used in these types of businesses. These occupations are interesting and satisfying for people who like to work with machinery and take care of plants. Much of the work is outdoors and requires some manual labor.

The educational requirements for these occupations would include agricultural education at the secondary level with an emphasis in the specialty area of the industry. For example, production and maintenance workers employed in a horticultural business would concentrate their coursework in subjects which cover topics such as propagating plants; classifying horticultural plants; controlling plant pests; growing ornamental plants; establishing and maintaining turf areas; transplanting and maintaining landscape plants; and surveying, grading, and tiling. Whereas, individuals interested in similar occupations which are found on a farm (fruit, vegetable, cereal grain/oil crop) might take courses which cover problem areas like enhancing soil fertility; preventing soil erosion and managing land; understanding plant germination, growth, and development; identifying alternative crop production systems; controlling plant pests; and identifying and using agricultural tools and equipment. In addition to classroom instruction, students will need to practice what they learned. This practice can be obtained through supervised agricultural experience programs which will give them valuable work experience when applying for a full-time position.

## VETERINARY SERVICES AND ANIMAL SERVICES
### Production and Maintenance Occupations




2050
Production &
Maintenance
Occupations

| Standard Occupational Classification | Occupational D.O.T. Titles |
|---|---|
| Supervisors, Animal Caretakers | Livestock Yard Supervisor<br>Show Cattle Caretaker Superv. |
| Supervisors, Livestock, Dairy, and Poultry Workers | Supervisor Dairy Production<br>Supervisor Egg Production<br>Supervisor Livestock Yard |
| Livestock Workers, Except Dairy/Poultry | Sheep Shearer |
| Dairy Workers | Dairy Farm Worker |
| Poultry Workers (Slaughter or Egg Production) | Poultry Breeder<br>Poultry Vaccinator<br>Chick Sexer<br>Poultry Hatchery Laborer |
| General Farmhands (May Be Combined Livestock & Crop) | Poultry Farmer<br>Farmer, General |
| Slaughterers and Butchers | Butcher, All-Round<br>Butcher Apprentice |
| Meat, Poultry and Fish Cutters/Trimmers | Trimmer, Hand<br>Cutter, Hand |
| Artificial Inseminators | Artificial Inseminator<br>Artificial-Breeding Technician |
| Animal Caretakers, Except Farm | Animal Caretaker<br>Animal Keeper<br>Animal Nursery Worker |
| Dog/Cat Groomers | Dog Groomer/Cat Groomer |

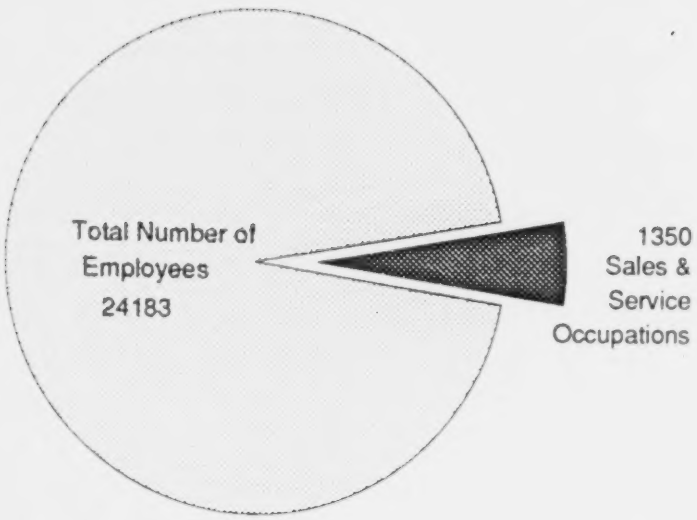
Figure #9b

These animal service workers are responsible for the care and maintenance of the animals of their employer's business. They water and feed them, and see that they are provided with adequate shelter and safety. Their responsibilities also include vaccinating and checking for disease. They might also treat minor injuries or ailments. In some cases, where small domestic animals and show or pleasure animals are involved, the employees may be in charge of cleaning, clipping, and brushing the animals.

Livestock farms, ranches, riding stables, animal hospitals and clinics, and research laboratories often employ people in these occupations. Depending on the type of industry, the working environment may be indoors or outdoors. Generally some manual labor is necessary when moving livestock equipment and supplies. These occupations are generally more stable than those associated with plant care and production because animals require year-round attention and are not as subject to seasonal trends.

The educational requirements for these occupations would include agricultural education at the secondary level with an emphasis in the specialty area of the industry. For example, production and maintenance workers employed in a beef and swine business would concentrate their coursework in subjects which discuss these types of animals and cover topics such as identifying basic principles of animal science; understanding the animal production industry; classifying animals; understanding animal anatomy and physiology; meeting nutritional needs of animals; maintaining animal health; meeting the environmental requirements of animals; and caring for animals. Whereas, individuals interested in similar occupations which are found in a small animal hospital or clinic might take related and additional courses which cover problem areas like performing examining room and laboratory work; and assisting with first aid and surgery. In addition to the classroom instruction, students will need to apply their instruction through supervised agricultural experience programs which will give them valuable work experience when applying for a full-time position.

## SALES and SERVICE OCCUPATIONS




| Standard Occupational Classification | Occupational D.O.T. Title |
|---|---|
| Sales Manager | Sales Manager, Agric. Equipment<br>Ag. Chemical Sales Manager<br>Feed Sales Manager<br>Livestock Equip. Sales Manager |
| Salespersons, Wholesale | Ag. Chemical Sales Representative<br>Seed Sales Representative<br>Fertilizer Sales Representative |
| Salespersons, Retail | Salesperson, Agric. Equipment<br>Salesperson, Parts Ag. Equipment<br>Salesperson, Animal Feed Products<br>Salesperson, Lawn & Garden Equipment<br>Salesperson, Hort. & Nursery Products<br>Sales Attendant<br>Sales Clerk |
| Janitors and Cleaners, Except Maids and Housekeeping Cleaners | Maintenance Technician<br>Janitor<br>Fumigator |
| All Other Service Workers | Field-Contact Technician, Dairy<br>Livestock Buyer<br>Field Service Representative<br>Park Aide |

Figure #10

29

In many agricultural service industries the sales and service occupations are considered the most important. Sales and services workers complete the agricultural line of production by selling the products and merchandise that managers, professional and technical workers, production workers, repairers, machine operative workers, and clerical workers have all spent time and effort producing. This high consideration is based on the premise that nothing happens until something is sold. Sales and service occupations provide an excellent avenue for advancement within these industries as individuals gain the required professional work experience and education.

In the area of sales, merchandising, and marketing of agricultural products, it has been projected that over 15,000 new job openings will be available nationwide each year throughout the 1990s. At the top of these job openings will be technical sales and marketing. The occupation of selling is becoming more sophisticated. Successful salespersons will need to possess the ability to recognize customer needs and determine how to solve these needs using their company's products. Successful salespersons will also need to have a scientific or technical background to close sales ahead of their competition and generate a stable supply of regular customers.

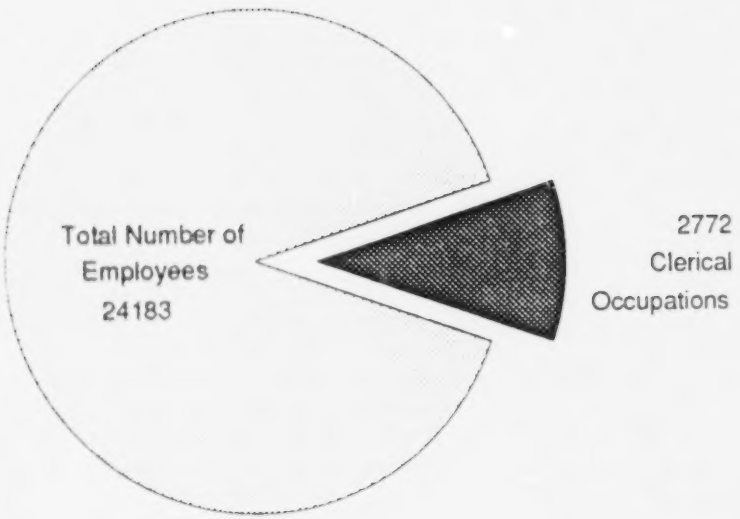
It is expected, therefore, that salespeople will become more professional in their activities. They will need to understand all aspects of the job thoroughly, including not only the art of selling but also more technical details concerning the products and services that go with it. Furthermore, more of the salesperson's work, which is already not an 8:00 to 5:00 job, will likely be done on an appointment basis. Salespeople will need to develop considerable ability, but their efforts will be rewarded in the form of higher wages and commissions. Depending on the type of business, the sales occupation may be indoors at a store or outdoors covering a specified geographical territory.

With these jobs, entry-level part-time employment as a sales associate is common while still in high school. This employment can be started as supervised agricultural experience which will complement an agricultural education program. To enhance the opportunities for advancement, you should consider secondary and postsecondary education which concentrates on such areas as agricultural business marketing, human relations, communication in the workplace, marketing agricultural products and services, and advertising and selling agricultural products and services. These occupations are people oriented, so individuals considering this career field need to enjoy working with a variety of persons and personalities.

Service occupations, other than sales and marketing, which are identified in this area are concerned with the care and maintenance of the business structures. These occupations require individuals who have training and abilities in construction and building techniques. The worker's tasks can include keeping the business area clean and safe, repairing damaged or worn parts of the business structure, and constructing new facilities. These individuals need a mechanical background and good problem-solving skills. Education and training should include such areas as welding and metalworking; designing, building, and maintaining agricultural structures; and maintaining tools and equipment. General maintenance mechanics earn an average of $19,000 per year. Wages vary widely by industry and geographical location.

Entry-level sales and marketing positions may start at about $8,300 per year for individuals with a secondary education. However, opportunities for advancement in both pay and position are likely for individuals as work experience and education are increased. For individuals with two or more years of postsecondary education and training, average starting salaries of $18,000 to $22,000 are possible. It is not uncommon for experienced sales representatives to earn $30,000 to $50,000 annually through salary and commission.

## CLERICAL OCCUPATIONS




| Standard Occupational Classification | Occupational D.O.T. Titles |
|---|---|
| Supervisors and Manager/Supervisors Clerical & Administrative Support Occ. | Supervisor, Audit Clerk<br>Supervisor, Account Receivable |
| Bookkeeping, Accounting and Auditing Clerks | Accounting and Computing Clerk<br>Bookkeeper<br>General Office Clerk |
| Secretaries | Secretary |
| Typist | Clerk Typist<br>Word Processor |
| Payroll and Timekeeping Clerks | Payroll Clerk/Timekeeper |
| Traffic, Shipping and Receiving Clerks | Route-Delivery Clerk<br>Shipping & Receiving Clerk<br>Distribution Clerk<br>Milk-Receiver |
| Personnel Clerks, Except Payroll and Timekeeping | Personnel Assisting Clerk<br>Personnel Clerk<br>Office Supervision Clerk |
| Data Entry Keyers, Except Composing | Data-Typist<br>Keypunch Operator |
| General Office Clerks | Administrative Clerk<br>Animal-Hospital Clerk<br>Animal-Shelter Clerk |
| Weighers, Measurers, Checkers, and Sampler-Recordkeeping | Receiving Clerk<br>Cargo Checker |
| Receptionists and Information Clerks | Appointment Clerk<br>Receptionist |

Figure #11

Success in any agricultural business usually comes down to the abilities of the clerical personnel. They are responsible for filing and typing documents that staff members have turned in. The clerical workers input the data into computers and often use various office machines. They answer telephones and screen incoming calls for other personnel, sometimes taking and delivering messages. Some clerical staff also greet customers and clients when they enter the business building. They need to have knowledge of the business operation, the merchandise, and services offered along with an understanding of the technical language. Accuracy of processing and transmitting information to the staff is very important to the efficient operation of the business. The clerical workers keep the lines of communication clear for those involved. Another area of importance is the ability of the clerical personnel to keep confidential information from unauthorized people.

Clerical workers usually work in clean, well-lit areas, free from high noise levels. The work can be stressful during seasonal business activities, but generally the clerical worker has a 40-hour, 5-day work week.

Graduates of secondary programs which include education and training in performing general office work will generally qualify for entry-level positions. Postsecondary education is beneficial if it reflects the occupational tasks associated with the job. Some agricultural service businesses, such as animal clinics and landscape businesses, need clerical staff with some degree of specialized training. Clerical workers should be proficient in keyboarding, word processing, data base management, electronic recordkeeping, business and office management, and accounting.

Trends in employment have indicated that well trained individuals will have ample opportunities for work in this area. Incomes vary for these employees, but tend to fall between $11,300 and $28,000.

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